ABSTRACT

The present invention is to clarify causes of hampering the performance by quantitatively associating a value of a parallel efficiency with factors of hampering the improvement of the performance of a parallel computer system. Processing time $\alpha(p, n)$ for a portion to be sequentially processed, processing time $\beta(p, n)/p$ for a portion to be parallel processed and processing time $\sigma(p, n)$ caused by an overhead for the parallel processing at the time of the execution of a parallel processing program are measured. A parallelized rate $R_{para}(p, n)$, a sequential calculation time ratio $R_{\alpha}(p, n)$ and a parallel overhead ratio $R_{\sigma}(p, n)$ are calculated by using the obtained processing time $\sigma(p, n)$ for the portion to be sequentially processed, $\beta(p, n)$ for the portion to be parallel processed and $\sigma(p, n)$ caused by the overhead for the parallel processing. A parallel efficiency $E_{para}(p, n)$ is calculated in accordance with an expression $1/R_{para}(p, n) \times (1-R_{\alpha}(p,n)-R_{\sigma}(p, n))$.